# PILOT 1200

PR-2900

This product manual contains important information about the safe installation and use of this projector. Please read and follow these instructions carefully and keep this manual in a safe place for future reference.

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Please note that as part of our ongoing commitment to continuous product development, specifications are subject to change without notice. Whilst every care is taken in the preparation of this manual we reserve the right to change specifications in the course of product improvement. The publishers cannot be held responsible for the accuracy of the information herein, or any consequence arising from them.


Every unit is tested completely and packed properly by the manufacturer. Please make sure the packing and / or the unit are in good condition before installation and use. Should there be any damage caused by transportation, consult your dealer and do not use the unit. Any damage caused by improper use will not be assumed by the manufacturer and / or dealer.

# ACCESSORIES

THESE ITEMS ARE PACKED TOGETHER WITH THE PROJECTOR

- G clamps (2 PCS)
- XLR cable with 3-pin plug and socket (1 PCS)
- Safety cord (2 PCS)
- Spare gobos (4 PCS)
- This manual (1 PCS)

Ω clamps(Options)(2PCS)

# INTRODUCTION

Thank you for purchasing our product PILOT 1200, PR-2900.

This product manual contains important information about the safe installation and use of this projector. Please read and follow these instructions carefully and keep this manual in a safe place for future reference.

PILOT 1200 is an innovative projector with an elegant housing, which complies to CE norms and standards and uses international protocol DMX 512.

The projector uses HMI1200W/S discharge lamp and high quality optical system, which produces bright and beautiful light beam and has 60% output lumen more than the similar products with the same power consumption. The projector features effects of strobe, frost light, mixed colours and rainbow, so it is suitable for applications in TV station, disc, singing and dancing stage, nightclub, etc.

# SAFE USAGE OF THE PROJECTOR

When unpacking and before disposing of the carton check there is no transportation damage before using the projector. Should there be any damage caused by transportation, consult your dealer and do not use the apparatus.

The projector is for indoor use only, IP20. Use only in dry locations. Keep this device away from rain and moisture, excessive heat, humidity and dust. Do not allow contact with water or any other liquids.

The projector is not designed or intended to be mounted directly on to inflammable surfaces.

The projector is only intended for installation, operation and maintenance by qualified personnel.

The projector must be installed in a location with adequate ventilation, at least 50cm from adjacent wall surfaces. Be sure that no ventilation slots are blocked.

Do not project the beam onto inflammable surfaces, minimum distance is 5m. 5m

Avoid direct exposure to the light from the lamp. The light is harmful to the eye.

Do not attempt to dismantle and/or modify the projector in any way.

Electrical connection must only be carried out by qualified personnel.

Before installation, ensure that the voltage and frequency of power supply match the power requirements of the projector.

It is essential that each projector is correctly earthed and that electrical installation conforms to all relevant standards.

Do not connect this device to any other types of dimmer apparatus.

Make sure that the power-cord is never crimped or damaged by sharp edges. Never let the power-cord come into contact with other cables. Only handle the power-cord by the plug. Never pull out the plug by tugging the power-cord.

Keep the lamp clean. Do not touch the lamp glass with bare hand.

The projector should always be installed with a secondary safety fixing. A safety cord is supplied for this; it should be attached as shown in “installing the projector” section.

The lamp used in this projector is an HMI1200W/S discharge lamp. After switching off don’t attempt to restart the projector until lamp has cooled, this will require approx 15 minutes. Switching the lamp on and off at short intervals will reduce the life of both the lamp and the projector. But occasional breaks will prolong the life of the lamp and projector.

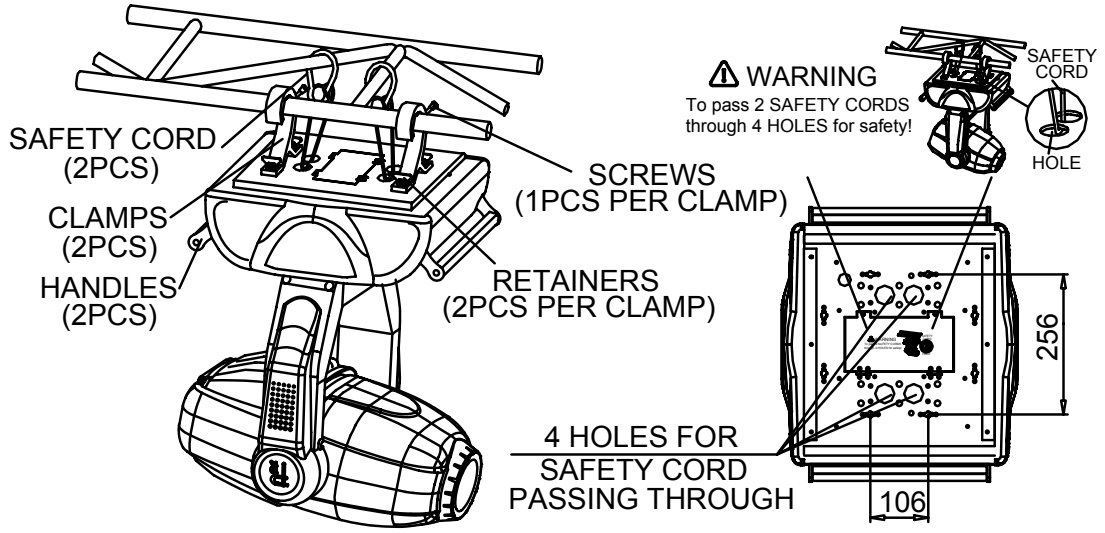
Never run the projector without a lamp.

There is no user serviceable parts inside the projector, do not open the housing and never operate the projector with the covers removed.

**Always disconnect from the mains, when the device is not in use or before cleaning it or before attempting any maintenance work.**

If you have any questions, don’t hesitate to consult your dealer or manufacturer.

# INSTALLING THE PROJECTOR

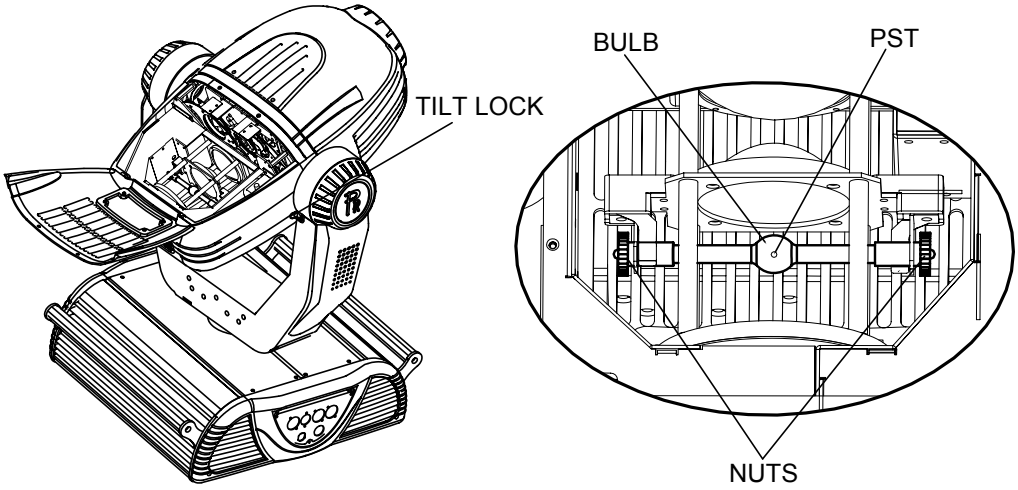



Take 2 clamps and 2 safety cords out from the package and mount 2 clamps on the underside of fixture with 2 retainers attached to each clamp. Hang the fixture on the structure and fasten the screws attached to each clamp. (Watch the **WARNING** on the underside of the base as shown above) **To pass 2 SAFETY CORDS through 4 HOLES for safety!** Always ensure that the projector is firmly anchored to avoid vibration and slipping whilst functioning. Always ensure that the structure that you are going to mount the projector is secure and is strong enough to support a weight of PILOT 1200.

**WARNING: 1. Unlock the PAN and TILT before the 1st application of projector for safety.**

**2. The projector MUST be lifted or carried by the HANDLES instead of clamps.**

# FITTING THE LAMP




Lock tilt before fitting/replacing the lamp.

Loosen 2 M5 screws and open one of the rear covers, you can see the structure as shown in the figure above.

Loosen 2 nuts at the both ends of lamp and take out the worn-out lamp. Suggest to free one end after another.

Fit new lamp and fasten 2 nuts at the both ends of lamp. Notes: don't touch the bulb of the new lamp with bare hand so as not to influence the beam output; the PST (pumping stem tip off) on the bulb facing the rear cover with fans perpendicularly and being not in the beam's way is a must and aids cooling.

Close the rear cover and fasten 2 M5 screws.

**WARNING: The HMI series are high-pressure lamps with external igniters (⚠). Care should always be taken when handling these lamps. Always read the manufacturers "Instructions for use" enclosed with the lamp.**

# POWER SUPPLY - MAINS

Connect the power cord as follows:

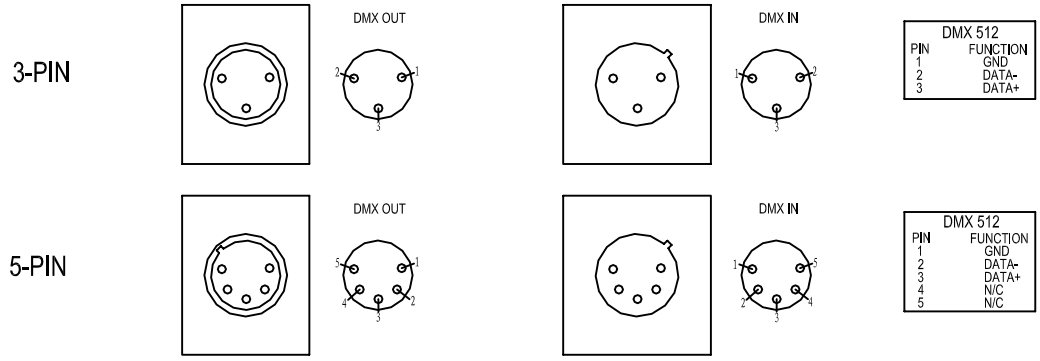
L (live) =brown
E (earth) =yellow/green
N (neutral) =blue

Use the plug provided to connect the mains power to the projector paying attention to the voltage and frequency marked on the panel of the projector. It is recommended that each projector be supplied separately so that they may be individually switched on and off.

**IMPORTANT**

**It is essential that each projector is correctly earthed and the electrical installation conforms to all relevant standards. Power consumption of the PILOT 1200 is 1628W.**

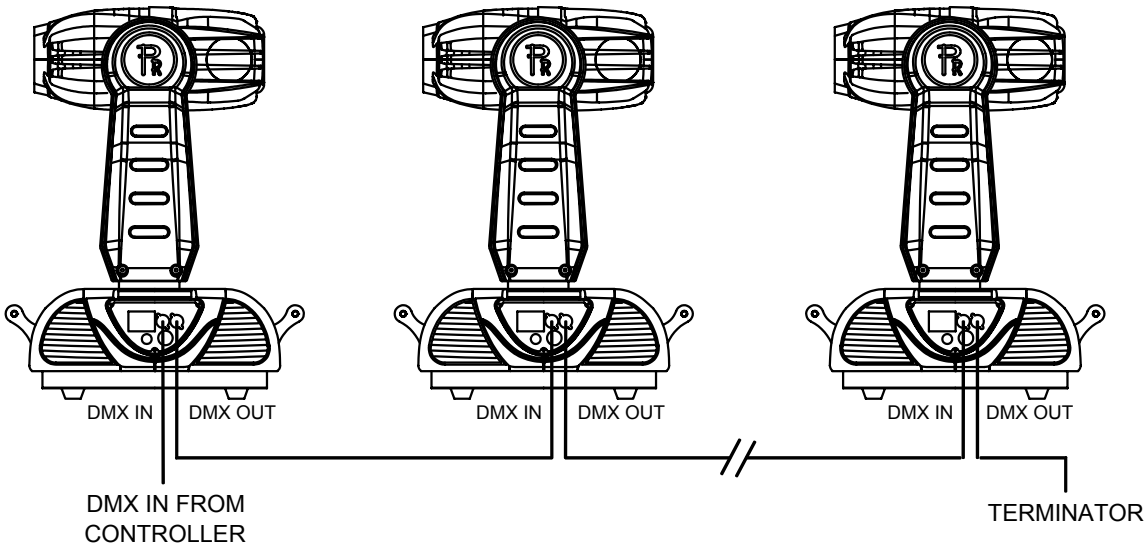
# CONTROL CONNECTIONS




Connection between controller and projector and between one projector and another must be made with a 2 core-screened cable, with each core having at least a 0.5mm diameter. Connection to and from the projector is via cannon 3 pin (which are included with the projector) or 5 pin XLR plugs and sockets. The XLR's are connected as shown in the figure above.

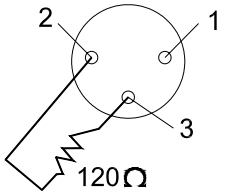
Note: care should be taken to ensure that none of the pins touch the metallic body of the plug or each other. The body of the plug is not connected in any way. The PILOT 1200 accepts digital control signals in protocol DMX512 (1990).

Connect the controller's output to the first fixture's input, and connect the first fixture's output to the second fixture's input and connect the rest fixtures in the same way. Eventually connect the last fixture's output to a DMX terminator as shown in the figure below.



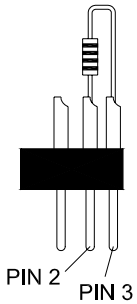
## DMX TERMINATOR

In the Controller mode, at the last fixture in the chain, the DMX output has to be connected with a DMX terminator. This prevents electrical noise from disturbing and corrupting the DMX control signals.
The DMX terminator is simply an XLR connector with a 120Ω (ohm) resistor connected across pins 2 and 3, which is then plugged into the output socket on the last projector in the chain. The connections are illustrated below.

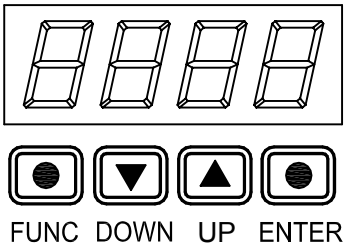



**DMX TERMINATOR CONNECTION**

Connect a 120Ω(OHM) resistor across pins 2 and 3 in an XLR plug and insert into the DMX OUT socket on the last unit in the chain.




## SETUP OPTIONS - PROJECTOR CONFIGURATION




Projector configuration can be set conveniently via pressbutton switch and digital display. Turn the projector on and the digital display will show DMX address you set and save last time and it can be reset and saved again as you please.
Press button UP or DOWN if you want to browse through the various Setup Options.
Press button ENTER to save your settings or enter the next menu. Press button UP or DOWN to shift the display between On and OFF or change the display of address.
Press button FUNC, it will return to the upper menu one by one. The display will return automatically to the function of address display if you stay for about 60 seconds defaulted.
E.g. if you want to set the function of Pan、Tilt 16bit precision valid, do as follows: launch the apparatus; press button FUNC to Addr which is displayed in digital display; press button UP to OPtn; press button ENTER, it will display InuP; press button UP consecutively to HrES; press button ENTER, it will display OFF; press button ON to On; in the end, press button ENTER. Well done, you have validated this function now.

If you want to set the function of Pan、Tilt 16bit precision invalid, press button DOWN to OFF; Then press button ENTER to invalidate this function.
And, if you want to set another function valid or not, press button FUNC to track back one by one; then, do the same way of e.g. above.

## TO SET THE DMX START ADDRESS

Each PILOT 1200 must be given a DMX start address so that the correct projector responds to the correct control signals. This DMX start address is the channel number from which the projector starts to “listen” to the digital control information being sent out from the controller. The PILOT 1200 has 22 channels, so set the No. 1 projector’s address 001, No. 2 projector’s address 023, No. 3 projector’s address 045, No. 4 projector’s address 067, and so on.

Launch the projector. Press button FUNC to Addr; press button ENTER, it will display A001; press button UP and DOWN, you can set the address; press button ENTER to confirm.

# FUNCTIONS DISPLAY

DISPLAY ADDR.

SET ADDR.

ADDR. 001

PAN ANTI-CLOCKWISE ROTATION SWITCH

OFF

ON

TILT ANTI-CLOCKWISE ROTATION SWITCH

OFF

ON

PAN\TILT 16 BIT PRECISION SWITCH

OFF

ON

CODER SWITCH(PHOTOCOUPLER POSITIONING)

OFF

ON

COLOUR FILTER LINEAR SWITCH

OFF

ON

FIXED GOBO WHEEL LINEAR SWITCH

OFF

ON

LAMP SWITCH (RESERVED)

OFF

ON

(RESERVED)

OFF

ON

SLAVE IN MASTER/SLAVE MODE (RESERVED)

OFF

ON

MASTER MODE 1 (RESERVED)

OFF

ON

(CONTINUE)

MASTER MODE 2 (RESERVED)

OFF

ON

MASTER MODE 3 (RESERVED)

OFF

ON

MASTER MODE 4 (RESERVED)

OFF

ON

DISPLAY TIME

HOUR

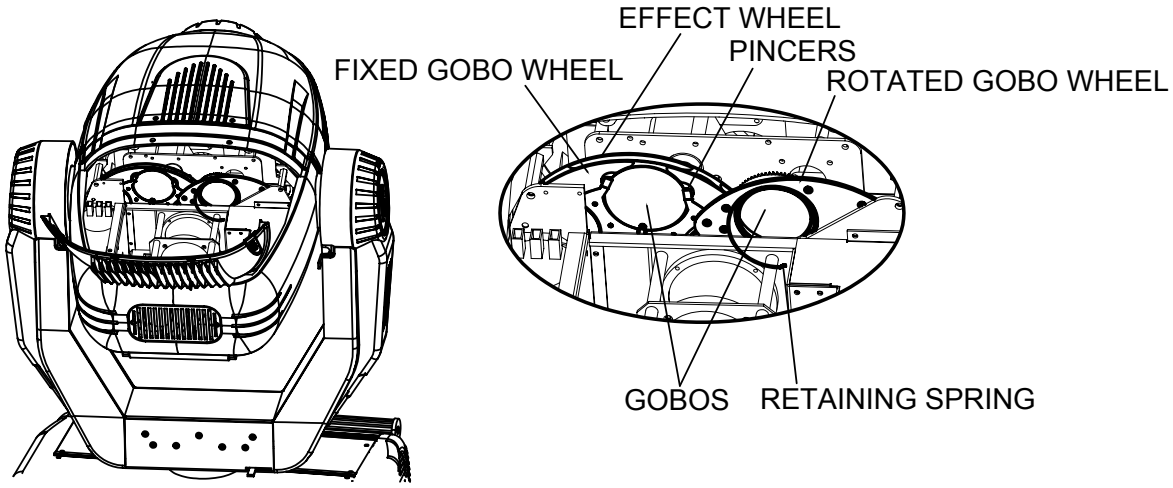
eg."H001" MEANS 1 HOUR

## ERRORS DISPLAY

In the course of launch, PILOT 1200 examines automatically whether there are errors and if there are, it will display information as follows:

| INFORMATION | ERRORS |
|---|---|
| Er02 | Sensor 1 temperature too high |
| Er04 | Lamp error |
| Er05 | EEPROM error |
| Er06 | Sensor 2 temperature too high |
| Er09 | Gobo rotation reset error |
| Er10 | Gobo change reset error |
| Er11 | Effect wheel reset error |
| Er12 | Colour wheel reset error |
| Er17 | Prism rotation reset error |
| Er18 | Prism change reset error |
| Er20 | Fixed gobos reset error |
| Er25 | Pan motor reset error |
| Er26 | Tilt motor reset error |

## REPLACING GOBOS




Lock Tilt. Loosen 2 screws on the rear cover with fans and open the rear cover with fans. You could see the structure as shown in the above figure.

For gobos replacement on the fixed gobo wheel: turn the effect wheel and rotated gobo wheel to a proper position first; take out a gobo from the fixed gobo wheel carefully; fit a new gobo. Note: if the gobo is a glass one, it should be touched with glabrous, clean and soft tissue or cloth matted between hand and glass instead of with bare hand.

For filters replacement on the effect wheel: do in the same way of fixed gobo wheel.

For gobos replacement on the rotated gobo wheel: take an appropriate tool to tug the head of retaining spring up and engage your another hand to take the retaining spring out; take the gobo out; fit a new gobo and fit the retaining spring. Notes: the gobo cannot be touched with bare hand; never attempt to dismantle the gobo holder on which you want to replace the gobo; be careful of the gobo when the replacement is underway and don't drop it.

Close the rear cover and fasten 2 M5 screws.

# DMX CONTROL CHANNEL FUNCTIONS

The PILOT 1200 uses 22 DMX channels. They are listed in the following table.

| CHANNEL | DMX | DESCRIPTION |
|---|---|---|
| 1 Strobe | 000-009 | Shuttering |
| | 010-024 | White |
| | 025-039 | Strobe 1 |
| | 040-054 | Strobe 2 |
| | 055-069 | Strobe 3 |
| | 070-084 | Strobe 4 |
| | 085-099 | Strobe 5 |
| | 100-114 | Strobe 6 |
| | 115-129 | Strobe 7 |
| | 130-144 | Strobe 8 |
| | 145-159 | Strobe 9 |
| | 160-174 | Strobe 10 |
| | 175-189 | Strobe 11 |
| | 190-204 | Strobe 12 |
| | 205-219 | Strobe 13 |
| | 220-234 | Strobe 14 |
| | 235-249 | Strobe 15 |
| | 250-255 | White |
| 2 Dimmer | 000-009 | Black |
| | 010-024 | Open |
| | 025-255 | Dimming from light to dark (0-100%) |
| 3 Iris | 000-255 | Linearly adjust iris from large to small (0=wholly open; 100=wholly closed) |
| 4 Fixed Gobo | 000-031 | White |
| | 032-063 | Gobo 1 |
| | 064-095 | Gobo 2 |
| | 096-127 | Gobo 3 |
| | 128-159 | Gobo 4 |
| | 160-167 | Rotation speed 1 (slowest) |
| | 168-175 | Rotation speed 2 |
| | 176-183 | Rotation speed 3 |
| | 184-191 | Rotation speed 4 (fastest) |
| | 192-223 | Stop rotating |
| | 224-231 | Reverse rotation speed 1 (slowest) |
| | 232-239 | Reverse rotation speed 2 |
| | 240-247 | Reverse rotation speed 3 |
| | 248-255 | Reverse rotation speed 4 (fastest) |
| 5 Pan | 000-255 | Pan rotation |
| 6 Tilt | 000-255 | Tilt rotation |
| 7 Focus | 000-255 | Linearly focusing |
| 8 Zoom | 000-255 | Zooming with spot from large to small |
| 9 Colour Wheel | 000-024 | White. Note: stay 5 seconds while DMX value is 5, 6 or 7, the function reset perform |
| | 025-030 | White/colour filter 1 |
| | 031-036 | Colour filter 1 |
| | 037-042 | Colour filter 1/colour filter 2 |
| | 043-048 | Colour filter 2 |
| | 049-054 | Colour filter 2/colour filter 3 |
| | 055-060 | Colour filter 3 |
| | 061-065 | Colour filter 3/colour filter 4 |
| | 066-071 | Colour filter 4 |
| | 072-077 | Colour filter 4/colour filter 5 |

| | | |
|---|---|---|
| | 078-083 | Colour filter 5 |
| | 084-089 | Colour filter 5/colour filter 6 |
| | 090-095 | Colour filter 6 |
| | 096-101 | Colour filter 6/colour filter 7 |
| | 102-107 | Colour filter 7 |
| | 108-113 | Colour filter 7/white |
| | 114-121 | Rotation speed 1 (fastest) |
| | 122-129 | Rotation speed 2 |
| | 130-137 | Rotation speed 3 |
| | 138-145 | Rotation speed 4 |
| | 146-153 | Rotation speed 5 |
| | 154-161 | Rotation speed 6 |
| | 162-169 | Rotation speed 7 |
| | 170-177 | Rotation speed 8 (slowest) |
| | 178-191 | Stop rotating |
| | 192-199 | Reverse rotation speed 8 (slowest) |
| | 200-207 | Reverse rotation speed 7 |
| | 208-215 | Reverse rotation speed 6 |
| | 216-223 | Reverse rotation speed 5 |
| | 224-231 | Reverse rotation speed 4 |
| | 232-239 | Reverse rotation speed 3 |
| | 240-247 | Reverse rotation speed 2 |
| | 248-255 | Reverse rotation speed 1 (fastest) |
| 10<br>CYM-Cyan | 000-255 | Cyan (0-100%) |
| 11<br>CYM-Yellow | 000-255 | Yellow (0-100%) |
| 12<br>CYM-Magenta | 000-255 | Magenta (0-100%) |
| 13<br>Rotating Gobo | 000-050 | White |
| | 051-101 | Gobo 1 |
| | 102-152 | Gobo 2 |
| | 153-203 | Gobo 3 |
| | 204-255 | Gobo 4 |
| 14<br>Gobo Rotation | 000-119 | Gobo index（0~540°） |
| | 120-127 | Rotation speed 1 (fastest) |
| | 128-135 | Rotation speed 2 |
| | 136-143 | Rotation speed 3 |
| | 144-151 | Rotation speed 4 |
| | 152-159 | Rotation speed 5 |
| | 160-167 | Rotation speed 6 |
| | 168-175 | Rotation speed 7 |
| | 176-183 | Rotation speed 8 (slowest) |
| | 184-191 | Stop rotating |
| | 192-199 | Reverse rotation speed 8 (slowest) |
| | 200-207 | Reverse rotation speed 7 |
| | 208-215 | Reverse rotation speed 6 |
| | 216-223 | Reverse rotation speed 5 |
| | 224-231 | Reverse rotation speed 4 |
| | 232-239 | Reverse rotation speed 3 |
| | 240-247 | Reverse rotation speed 2 |
| | 248-255 | Reverse rotation speed 1 (fastest) |
| 15<br>Prism | 000-050 | White |
| | 051-101 | Prism 1 |
| | 102-152 | Prism 2 |
| | 153-203 | Prism 3 |
| | 204-255 | Prism 4 |
| 16<br>Prism Rotation | 000-119 | Index（0~540°） |
| | 120-127 | Rotation speed 1 (fastest) |
| | 128-135 | Rotation speed 2 |
| | 136-143 | Rotation speed 3 |

| | | |
|---|---|---|
| | 144-151 | Rotation speed 4 |
| | 152-159 | Rotation speed 5 |
| | 160-167 | Rotation speed 6 |
| | 168-175 | Rotation speed 7 |
| | 176-183 | Rotation speed 8 (slowest) |
| | 184-191 | Stop rotating |
| | 192-199 | Reverse rotation speed 8 (slowest) |
| | 200-207 | Reverse rotation speed 7 |
| | 208-215 | Reverse rotation speed 6 |
| | 216-223 | Reverse rotation speed 5 |
| | 224-231 | Reverse rotation speed 4 |
| | 232-239 | Reverse rotation speed 3 |
| | 240-247 | Reverse rotation speed 2 |
| | 248-255 | Reverse rotation speed 1 (fastest) |
| 17<br>Effects Wheel | 000-050 | White |
| | 051-101 | Effect 1 |
| | 102-152 | Effect 2 |
| | 153-203 | Effect 3 |
| | 204-255 | Effect 4 |
| 18<br>Frost | 000-255 | Frosting from slight to strong (0~100%) |
| 19<br>Pan & Tilt Speed | 000-255 | Pan&Tilt speed adjustable by steps from fast to slow |
| 20<br>Pan Fine | 000-255 | Pan rotation in 16 Bit precision |
| 21<br>Tilt Fine | 000-255 | Tilt rotation in 16 Bit precision |
| 22<br>Control | 000-170 | Lamp ON (Reserved) |
| | 171-255 | Lamp OFF after 10 seconds or over (Reserved) |

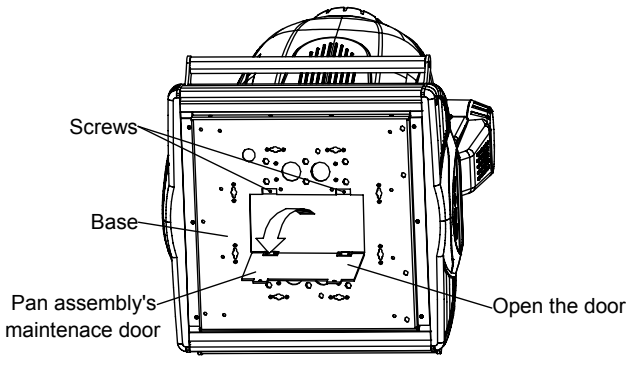
## LED DISPLAY

Green: ON——DMX signal OK or Slave;
OFF——No DMX signal;
Flash——DMX error;
Red: Medium flash——Menu mode;
Fast flash——software, cpu error;
Both ON: Address mode,
Flash in turn: Master mode.

## CHANGING BELTS

### Pan's belts

Free 2 screws on Pan assembly's maintenance door and open the door; change the belts; close the door and fasten the screws.




### Tilt's belts

The common users replacing the belts is not recommended.

# MAINTENANCE

If the projector's lens becomes damaged or broken it should be replaced. If the lamp becomes damaged or deformed in any way it must be replaced. If the light from the lamp appears dim this would normally indicate that it is reaching the end of its life and it should be changed at once, aged lamps run to the extremity of their life might explode. If the projector does not function, check the fuses on the power socket of the projector, they should only be replaced by fuses of the same specification 6.35X32 T15A/250V. On the PCBs inside the projector there are also 3 fuses. They are 2 fuses 6.3A ／250V (fast blow，5mmx20mm) on both Pan PCB and Tilt PCB, 1 fuse 4A／250V (fast blow，5mmx20mm) on driver PCB. Should these be damaged call a qualified technician before replacement. The projector has thermal protection device that will switch off the projector in case of overheating, should either of these operate, check that the fans are not blocked, and if they are dirty clean them before switching on the projector again. Check that the fans are operational, if not call a qualified technician.

**Any maintenance work should only be carried out by qualified technicians.**

# LUBRICATION

To ensure the continuous rotation of the rotating gobos and linear motion of the lens for focusing, it is recommended that the bearings for the rotating gobos and the 2 shafts for the focusing lens holder be lubricated periodically, preferably every two months. Use only high quality, high-temperature resistant grease instead of any type of oil. When lubricating the bearings, a syringe with a fine needle is the easiest way to introduce the grease to the bearings around each gobo.

# KEEPING THE PROJECTOR CLEAN

To ensure the reliability of the projector it should be kept clean. It is recommended that the fans should be cleaned every 15 days. The lens and dichroic colour filters should also be regularly cleaned to maintain an optimum light output. **Do NOT use any type of solvent on dichroic colour filters.**

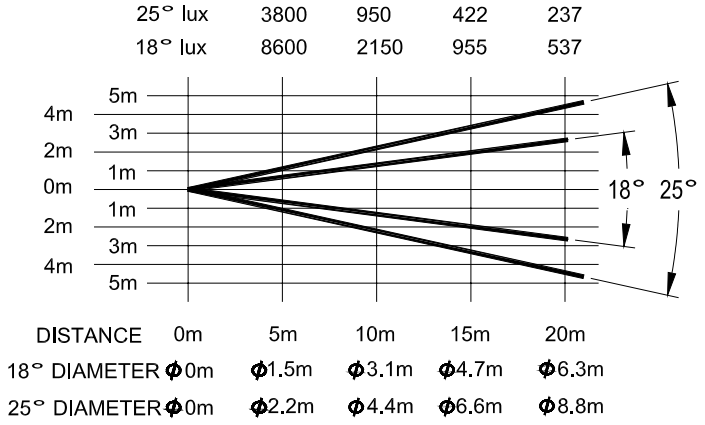
Cleaning frequency depends on the environment in which the fixture operates: damp, smoke or particularly dirty surroundings can cause greater accumulation of dirt on the unit's optics. A soft cloth and typical glass cleaning products should be used in cleaning. It is recommended to clean the external optics at least once every 20 days and clean the internal optics at least once every 30 / 60 days.

**Do not use any organic solvent, e.g. alcohol, to clean the reflector mirror, dichroic colour filters or housing of the apparatus.**

# TROUBLESHOOTING

| PROBLEM | POSSIBLE CAUSE | ACTION |
|---|---|---|
| The projector doesn't switch on | -The power supply is not present<br>-The lamp doesn't work | Check the fuse on the power socket.<br>Replace the lamp. |
| The lamp comes on but the projector doesn't respond to the controller | -Wrong DMX configuration and/or start address<br>- Defective DMX cable | Make sure that the projector is correctly configurated.<br>Replace or repair the DMX cable. |
| The projector only functions intermittently | -The fan has failed | Make sure the fan is working and not dirty. |
| Defective projection | -The lens is broken<br>-Dust or grease on lenses | Check the lenses are not broken.<br>Remove dust or grease from the lenses. |
| The projected image appears to have a halo | -Installation of the lamp is not correct<br>-Dust or grease contamination on the optics. | Make sure the lamp is installed correctly.<br>Carefully clean the optical group lenses and the projector components. |
| The beam appears dim | -Dust or grease contamination on the optics.<br>-The lamp is at the end of its life | Check the optics is clean.<br><br>Replace with a new lamp of the specified type and rating. |

## LIGHT OUTPUT



# TECHNICAL DATA

**VOLTAGES:**

200/220/230/240V AC, 50Hz or 60Hz

**POWER CONSUMPTION:**

1628W@230V

**LAMP:**

Type: HTI 1200W/S discharge lamp
Colour Temperature: 6000ºK
Socket: SFc10-4
Manufacturers Rated Lamp Life: 750 Hours

**COLOURS:**

CYM colour mixing system
1 wheel with 7 fixed Dichroic colours plus white
With variable speed bidirectional rainbow effect

**COLOUR TEMPERATURE CORRECTION:**

2 colour temperature correction filters

**GOBOS:**

**Rotating gobo wheel**
4 interchangeable gobos+white, indexable, bidirectionally rotating at variable speeds.
**Fixed gobo wheel**
4 interchangeable gobos+white, the fixed gobo wheel can scroll in eather direction at variable speeds.
Both glass gobos and metal gobos may be fitted to either wheel.
Gobo diameter: Φ51.8mm
Gobo image diameter: Φ48mm

**PRISM:**

1x2 facet, 1 x 3 facet, 1x5 facet, 1 x linear prisms, indexable, bidirectionally rotating at variable speeds

**FOCUS:**

DMX controlled focus

**EFFECT FILTERS:**

1 ultraviolet filter and 1 bicolour filter

**FROST:**

Variable frost effect, 0-100% linearly adjustable

**SHUTTER:**

Double shutter blades, 0-100% linearly adjustable

**STROBE:**

1 – 7 F.P.S.

**HEAD MOVEMENT:**

Pan 540º, Tilt 270º

**BEAM ANGLE:**

18º--25º linear zoom

**CONTROL:**

DMX512, 20 channels plus 2 channels for high resolution Pan and Tilt

**OTHER FUNCTIONS:**

Adjustable Pan & Tilt speed, Projector usage time display, lamp time display.

**HOUSING:**

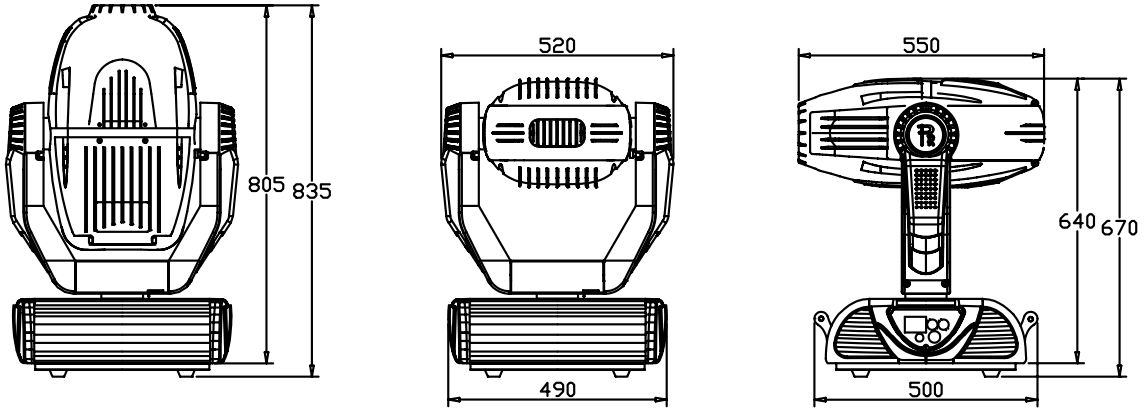
Metal and composite plastic (IP20)

**WEIGHT:**

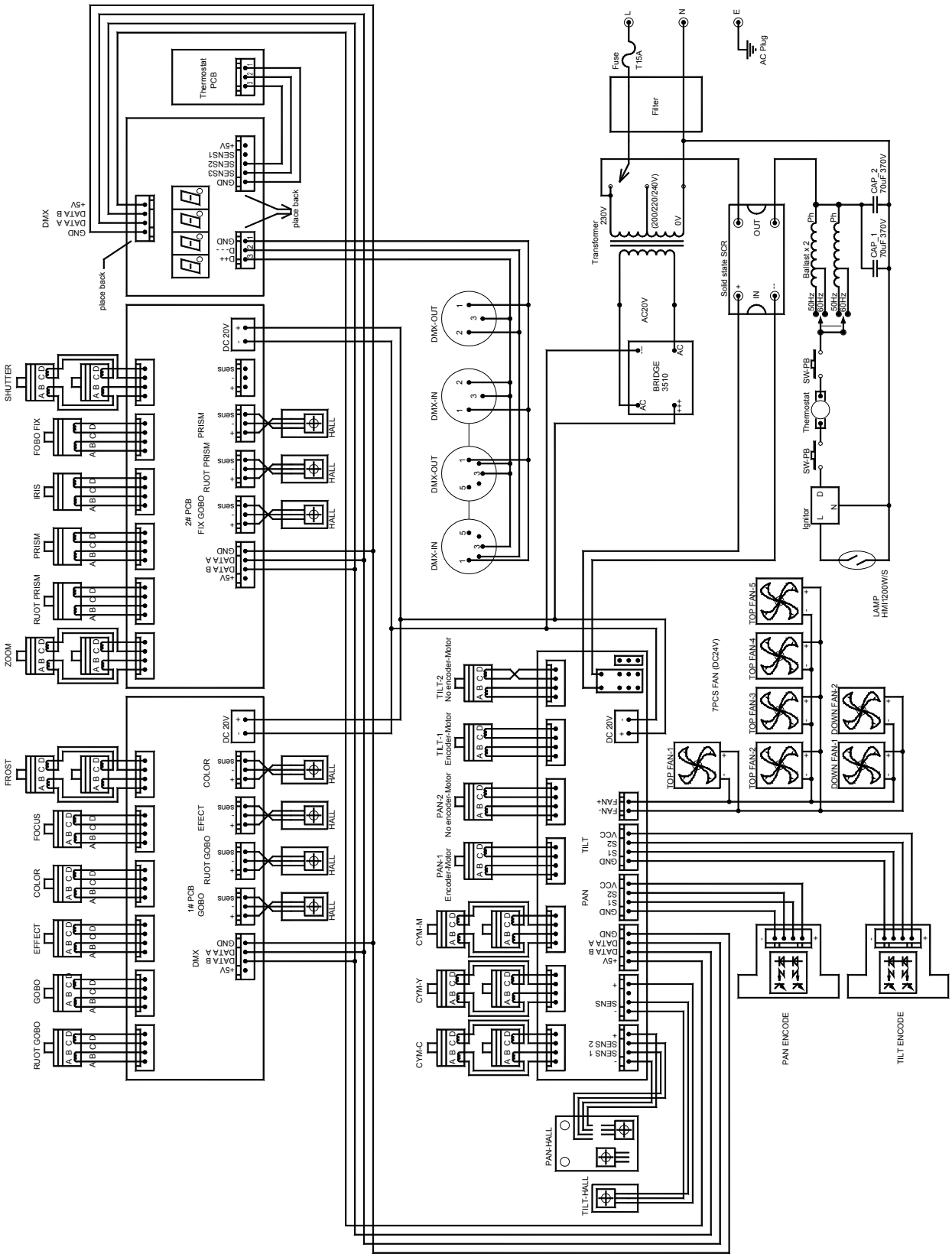
54Kg.

**SIZES:**

See Drawings



# ELECTRICAL DIAGRAM



# COMPONENT ORDER CODES

| NAME | PART NO. | REMARK |
|---|---|---|
| TRANSFORMER | 040030054 | 200/240V |
| | 040030056 | 220/230V |
| THERMOSTAT | 190010035 | KSD020 120/15A/250V |
| CAPACITOR | 140010043 | 70μF/370V |
| BALLAST | 040070059 | 230V/50-60Hz, 575W |
| IGNITOR | 040090036 | 575~1200W 6~8KV |
| LAMP | 100050013 | HMI 1200W/S |
| PAN&TILT DRIVE BELT1, 2, 3 | 290151221 | HTD459-3M-6 |
| "O" Belt | 290151302 | ∅100x3.1 |
| FANS | | |
| FAN1,2 in strobe（SUNNO） | 030060031 | KDE2408PTB1-6<br>24VDC |
| FAN3 in strobe（SUNNO） | 030069005 | KD2406PTS1<br>DC24V\2.6W |
| FAN4,5 on the rear cover | 030060039 | CIC-100（S-1） |
| FAN6,7 in base（SUNNO） | 030060035 | KDE2409PTB-6 24VDC |
| MOTORS | | |
| MOTOR 1,2 (PAN) | 030040089 | 23HS2039L |
| MOTOR 3,4 (TILT) | 030040068 | 23HS0001-07L |
| MOTOR 5,6 (SHUTTER BLADE) | 030040084 | 17HS0002-59L |
| MOTOR 7 (PRISM) | 030040085 | 17HS0002-61L |
| MOTOR 8 (PRISM) | 030060099 | |
| MOTOR 9 (PRISM ROTATION) | 030040085 | 17HS0002-61L |
| MOTOR 10 (FIXED GOBO WHEE) | 030060098 | |
| MOTOR 11 (COLOUR WHEEL) | 030040084 | 17HS0002-59L |
| MOTOR 12 (ROTATING GOBO WHEEL) | 030040098 | |
| MOTOR 13 (GOBO ROTATION) | 030040084 | 17HS0002-59L |
| MOTOR 14 (FOCUS) | 030040083 | 17HS0002-60L |
| MOTOR 15 (EFFECT WHEEL) | 030040083 | 17HS0002-60L |
| MOTOR 16,17 (ZOOM) | 030040083 | 17HS0002-60L |
| MOTOR 18,19 (FROST) | 030040060 | 16HY0002-02L |
| MOTOR 20,21 (CYM-YELLOW) | 030040061 | 16HY0002-03L |
| MOTOR 22,23 (CYM-CYAN) | 030040061 | 16HY0002-03L |
| MOTOR 24,25 (CYM-MAGENTA) | 030040060 | 16HY0002-02L |
| CHIPS | | |
| IC1, 2, 3 (NJM3771D2 或 PBL3771) | 170110004 | Pan & Tilt driver PCB |
| IC4, 5, 6, 7 (NJM3772D2) | 170110019 | |
| IC8 (MB88346B) | 170170056 | |
| IC9 (CM2576/5V) | 170170057 | |
| IC10 (MAIN CPU) | 230040161 | |
| IC11 (MINOR CPU) | 230040162 | |
| IC12, 13, 14, 15, 16, 17 (NJM3771D2 或 PBL3771) | 170110004 | Motor driver PCB Ⅰ<br>Motor driver PCB Ⅱ |
| IC18 (LM2574N-5) | 170170039 | |
| IC19 (MB88346B) | 170170056 | |
| IC20 (CPU) | 230040163 | |
| IC21 (CPU) | 230040159 | Digital PCB |
| IC22 (MCP100-450) | 170040035 | |
| IC23 (DS75176BN 或 SN75176BP) | 170170012 | |
| IC24 (24LC256) | 170170058 | |

**NOTE**: You may order all parts of the PILOT 1200 besides the table listed above. When ordering please state the exact name and part no. Repairs must be carried out by a qualified technician.

# CHANGING THE OPERATION VOLTAGE AND/OR FREQUENCY

**To be carried out by qualified engineers only**

The power input setting of the PILOT 1200 may be changed to suit the supply in your area that the unit is to be operated. The voltage and frequency are pre-set at the factory and marked on the exterior of the unit.

Any error or mistake in setting the voltage or frequency of the projector may seriously damage the unit.

Make sure the specifications of the transformer match the power supply and if not, the suitable transformer must be ordered (see the data).

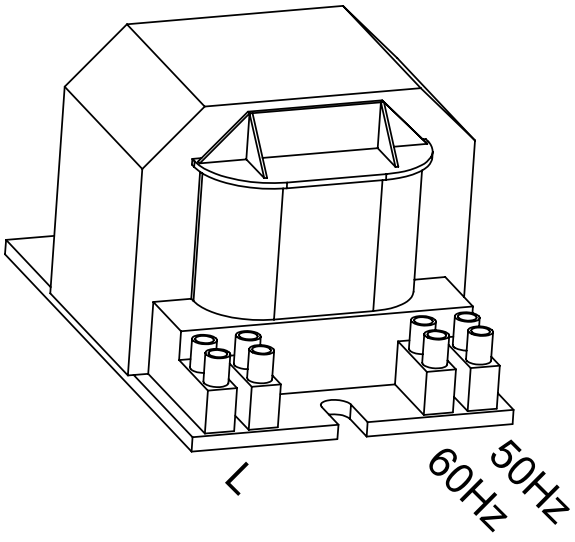
It is strongly recommended that you immediately mark the new frequency on the projector so that it may not be mistaken for the factory set frequency.

**To change the frequency**

Open the base of the projector by unscrewing the eight screws on the top of the base and do the following operation.

Locate the ballast in the base of the projector, and select the required frequency from 50Hz or 60Hz by moving the cable to the appropriate position. The ballast will be labeled to show the connections.

**Never move or disconnect the cable attached to the connector marked "L".**




Once finished with the settings, re-assemble covers.

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